ecology and environment, inc.
11 GOLDEN SHORE, LONG BEACH, CALIFORNIA 90802, TEL. (310) 435-6188
International Specialists in the Environment

June 26, 1992

U.S. Environmental Protection Agency
75 Hawthorne Ave.
San Francisco, CA 94105

Ref No.: T190692-004
TDD No.: T099201-013
PAN No.: ECA1877-SAA

Attention: William E. Lewis, Deputy Project Officer

Subject: **King Neptune Manufacturers Site Assessment, Bell Gardens, California**

On January 31, 1992, U.S. Environmental Protection Agency (USEPA) On-Scene Coordinator (OSC) D. Shane tasked the Technical Assistance Team (TAT) to conduct a preliminary assessment at an illegal lead smelter. This document contains a synopsis of all TAT activities from March 6, 1992 to May 5, 1992. All TAT activities prior to March 6 are described in the King Neptune Site Assessment Interim Report (TAT Reference Number: T190492-001).

The smelter was operated by King Neptune Industries (KNI), a company that produces lead scuba diving weights. The smelter was operated on a residential property located at 6612 Clara Street, Bell Gardens, California (see Attachment A, Figure 1). The property is owned by F. Teurman, and consists of a residential dwelling, a storage building and a smelter building. The smelter was historically operated by Mr. Teurman and is currently operated by Mr. Teurman's son, F. Teurman, Junior.

KNI does not have a business license from the City of Bell Gardens to operate within the city's jurisdiction. KNI is not a registered California Corporation.

The facility is located in a mixed residential and light commercial area (See Attachment A, Figure 2). On either side of KNI are residential dwellings. Approximately 25 meters northwest of KNI is a potato processing plant. One block southwest of the facility there is an adult education school with day care facilities and a park.

According to long-time residents of the area and Los Angeles County Tax Assessor records, the smelter has operated at this location since approximately 1955. Operation of the smelter is characterized by the release of a dark black smoke. This smoke is caused by the sources of lead that are used to make the diving weights. The primary source of lead used was from "pigs", a lead encasement coated with plastic, used to store radioactive isotopes used in cancer treatment (see Photographic Documentation,

Attachment B). KNI received the pigs from numerous medical facilities in California, Nevada and Arizona under a California Radioactive Materials License.

Regulatory involvement at KNI started in early 1984 with an inspection by Los Angeles County Department of Health Services Hazardous Materials Control Program (HMCP) Inspections and Enforcement Section (Enforcement). This inspection took place in January of 1984 and samples collected of soils adjacent to the smelter building indicated the presence of lead in the soil in excess of the California Total Threshold Limit Concentration (TTLC) hazardous waste determining level of 1,000 mg/kg. KNI held the California Radioactive Materials License until September 2, 1984, at which time the license expired and was not renewed. On February 14, 1985, the California Department of Health Service, Radiologic Health Branch (DOHS) ordered KNI to divest of all radioactive materials (lead pigs) to a licensed facility. KNI did not respond to the order issued by DOHS and continued to obtain the lead pigs.

On April 5, 1985, HMCP Enforcement conducted a joint inspection with Los Angeles County Department of Health Services Radiation Management Branch (RMB) at the KNI facility. A Notice of Violation (NOV) was issued to KNI by HMCP which ordered the firm to cease all illegal hazardous waste operations, including the illegal transport and disposal of hazardous waste (dumping of waste into trash bins at the potato factory). Samples collected during that inspection indicated the presence of lead in excess of TTLC. On July 11, 1985, HMCP issued a directive to KNI ordering the business to discontinue all practices that contribute to further contamination of the property. KNI did not comply with either the NOV or the Directive.

Based on the results of the April 5, 1985 inspection and the presence of children residing at the KNI property, the site was referred to Los Angeles County Department of Health Services Epidemiology Toxics Section, Child and Adolescent Health Unit (LACoDHS). In March 1988, a letter was sent to R. Teurman (F. Teurman's son) requesting that the residents of the property at 6612 Clara Ave., especially the children, be tested for lead (the County's historical file information did not document what actions took place between July 1985 and March 1988). Although Mr. Teurman initially indicated that he would cooperate, he refused to bring his family in for testing. On June 28, 1988, a second letter was sent by registered mail to Mr. Teurman. The letter was returned unopened. The children were eventually removed from the site by family members.

The County's historical file does not document the actions taken in relation to this site from June 1988 until December 1991. In December 1991, the City of Bell Gardens served an inspection warrant at KNI to obtain evidence of city building code violations. Several lead pigs were gathered as evidence by the Bell Gardens Police Department (BGPD). Upon noticing the radioactive symbols on the pigs, BGPD notified the Los Angeles County Fire Department (LACoFD) Health and Hazard Unit (HHU), formerly HMCP, who in turn notified RMB. These agencies, in cooperation with the City of Bell Gardens, conducted an inspection under the same warrant previously used. During this inspection, an extensive radiation survey was conducted. The survey did not detect levels in excess of regulatory limits. Samples were collected from inside the yard around the smelter and within the smelter building itself. The sample analysis again documented lead levels in excess of TTLC in the soil as well as inside the building.

In response to the findings of the December inspection, HHU issued a NOV and Order to Comply (NOV/OTC) to F. Teurman Jr. ordering him to discontinue all operations resulting in the generation of hazardous waste and to remove and legally dispose of all lead contaminated materials. Mr. Teurman again did not respond to the NOV/OTC.

Due to the uncooperative stance of the responsible party (RP), the magnitude of the contamination on-site and close residential proximity, HHU contacted the USEPA for assistance in late January 1992. TAT initiated site assessment activities on February 10, 1992. Initial TAT site assessment activities are listed in Table 1.

**TABLE 1**
**Initial TAT Site Assessment Activities**

| Date | Description |
|---|---|
| 02-10-92 | Historical records review at HHU office |
| 02-12-92 | Preliminary assessment and site walk through with HHU and City of Bell Gardens officials |
| 02-18-92 | Off-site soil sampling for enforcement order |
| 03-05-92 | On-site soil/smelter sampling for the enforcement order |

The above sampling results are discussed in the Interim Report.

On March 30, 1992, TAT member R. Wise contacted LACoDHS Director Dr. P. Papanak, concerning collection of the blood samples from the Teurman children. Dr. Papanak stated that the blood samples were never collected. He referred TAT to M. Derry of LACoDHS. Ms. Derry substantiated Dr. Papanak's information. She stated that when the public health nurse visited the Teurman home, the children had already been moved. Ms. Derry also confirmed that no other children in the neighborhood had been tested.

On April 9,1992, TAT member R. Wise attended a multi-jurisdictional meeting concerning the future of the KNI site. Present at this meeting were representatives from HHU, LACoFD Station 39 (fire suppression jurisdiction), LACoFD Fire Code Inspector, Bell Gardens Building Codes Enforcement, Bell Gardens Property Rehabilitation Section and the Bell Gardens City Attorneys Office. Topics discussed included: a synopsis of USEPA actions up to that point and USEPA's potential role in the cleanup of the site, obtaining building and equipment demolition order for the smelter building and smelting equipment from the City, responsible party liability and the action level for lead concentration in dust within residences surrounding the site. TAT then contacted OSC D. Shane and briefed him on the meeting's outcome.

In order to adequately characterize the exposure to the community, OSC D. Shane tasked TAT to collect wipe samples of dust in residential dwellings surrounding the site. To properly collect these samples, TAT consulted several sources of information on wipe sampling for lead. Based on this information, a Quality Assurance Sampling Plan (QASP) was written for the wipe sampling (see Attachment C). The samples were collected using prepared wipes supplied by the laboratory, B and C Analytical. A dilute nitric acid was used as the substrate for the lead. On April 16, 1992, TAT members R. Randall and R. Wise conducted the wipe sampling at six residences at or near the KNI site. Sample locations are listed in Table 2 and shown in Attachment A, Figure 3.

During the wipe sampling, TAT was accompanied by N. Claro, USEPA Community Relations Section and representatives from the City. Prior to the collection of the sample, each resident or property manager signed a property access form provided by USEPA. TAT initially encountered problems accessing the residence at 6612 Clara St. (KNI property) due to Mr. Teurman's (senior) mental incompetence and the belligerent and threatening position of his son Raymond Teurman concerning property access. As a result, TAT waited until later in the day to sample the Teurman residence and was accompanied by BGPD for security purposes. Prior to collecting the samples, Mrs. Teurman signed an access agreement.

Two samples were collected from each residence. The samples were collected from within the breathing zone of a child. Area of dust accumulation were targeted as well as rooms frequently used by children. Each resident was asked to complete an epidemiology survey supplied by the LACoDHS.

The samples were custody sealed and logged on a chain of custody. A field blank and a sample to undergo MS/MSD analysis were also submitted to the lab. The samples were submitted for total lead analysis per SW-846 Method 7421 (total lead by AA-graphite furnace). Sample results are listed in Table 2. Sample locations and results, and the epidemiology survey were forwarded to the Agency for Toxic Substances Disease Registry (ATSDR) for interpretation (ATSDR interpretation of the data will be discussed in the removal action report).

**TABLE 2**
**Wipe Sampling Locations and Results**

| Address | Sample No./Location | Lead Concentration mg/wipe |
|---|---|---|
| 6615 Clara St. | W-6615-1 / Front Room Window Sill | 0.65 |
| | W-6615-2 / Child's Room Window Sill | 23.00 |
| 6622 Clara St. | W-6622-1 / North Bedroom (Child's) Wall | 0.05 |
| | W-6622-2 / South Bedroom (Child's) Window Sill | 0.05 |
| 7751 3/4 Scout St. | W-7751 3/4-1 / North Bedroom (Child's) Closet Door | 0.13 |
| | W-7751 3/4-2 / Living Room Window Sill | 0.19 |
| 7755 Scout St. | W-7755-1 / Living Room Window Sill | 2.20 |
| | W-7751-2 / West Bedroom Window Sill | 0.47 |
| 7743 Scout St. | W-7743-1 / North Bedroom Window Sill | 0.56 |
| | W-7743-2 / Living Room Window Sill | 0.22 |
| 6612 Clara St. | W-6612-1 / Wall Near Kitchen Door | 4.50 |
| | W-6612-2 / Hallway Wall Under Light Switch | 0.52 |

Between April 16 and April 21, 1992, TAT members R. Randall and A. Talamantez constructed and installed a site specific model for the

KNI site on the X-MET 840 X-Ray Fluorescence Spectrometer (XRF). The soil samples collected on February 18 and March 5, 1992 were used to construct the model. TAT member R. Wise wrote a QASP for soil sampling to take place on April 21, 1992 (see Attachment C). The objective of this sampling effort was to further characterize horizontal and vertical extent of the lead contaminated soil. During this time period, OSC D. Shane made contact with F. Teurman, Jr. to arrange for access to the smelter building and property to collect the samples.

From April 21 to 24, 1992, TAT members R. Wise and A. Talamantez conducted a survey of soil at the KNI site and surrounding properties using the XRF and site-specific model. The purpose of this survey was to thoroughly characterize the vertical and horizontal extent of contamination on-site. The survey was conducted at 7751 and 7743 Scout St. and 6612 and 6622 Clara St. The areas of exposed soil at the Scout St. addresses were minimal and the survey was conducted using randomly selected sample points. Areas of exposed soil at the Clara St. locations were divided into marked grids. The layout of the grid areas and the soil lead concentration is shown in Attachment A, Figures 4-8.

Each grid was surveyed at five surface points using the XRF. The survey was conducted on the surface, at a depth of six inches and a depth of one foot. The surface survey was conducted on soil in-situ. The subsurface survey was conducted by collecting the samples in zip-lock plastic bags. The sample was then surveyed through the zip-lock bag. The subsurface samples were collected from a random selection of the grids. Each grid from which a subsurface sample(s) was collected had from one to five points sampled. The XRF exposure period used was 60 seconds.

On April 23, 1992, TAT member R. Wise was backfilling bore holes with the soil removed for the XRF survey and discovered isotope bottles in a bore hole in Grid 8 (See Attachment A, Figure 4). TAT conducted a radiation survey of the bore hole using a Victoreen Radiation Meter. Radiation levels were not above background. TAT then notified OSC D. Shane and RMB. RMB dispatched K. Henner to conduct a radiation survey and inspect the bottles.

Ms. Henner's survey confirmed TAT's survey that levels did not exceed background. During Ms. Henner's survey, TAT excavated the hole, removing approximately 250 bottles. Ms. Henner stated that the isotopes in the bottles had a half life of five days to one month and had expired. The excavated bottles were placed in hot trash and left on-site for future disposal. The hole was back filled and marked for future consideration.

To ensure proper field quality control, soil samples were collected from approximately 20% of the grids surveyed (11 samples) and submitted for total lead analysis via SW-846 Method 7420 (Note: no surface samples were collected at 6612 Clara St. due to sufficient data from earlier sampling efforts). Two samples were also submitted for pH analysis via SW-846 Method 9045. Soil pH samples were submitted to determine if battery recycling activities had occurred on-site. Surface samples were collected directly from the grided area. The depth samples were collected from the zip-lock bags. Analytical results are listed in Table 3. Sampling locations are denoted in Attachment A, Figures 4 - 8.

**Table 3**
**Soil Characterization Data**

| Sample Number | Sample Depth | Lead Concentration mg/mg |
|---|---|---|
| 6622 - 12 - 1 | Surface | 5,600 |
| 6622 - 14a - 2 | Surface | 8,500 |
| 6612 - 8 - 3 | Six inches | 140 |
| 6612 - 8 - 4 | Six inches | 99 |
| 6612 - 16c - 5 | Six inches | 1,700 |
| 6612 - 19 - 6 | Six inches | 410 |
| 6612 - 28 - 7 | Six inches | 250 |
| 6622 - 14 - 8 | Six inches | 42 |
| 6612 - 16c1 - 9 | One foot | 110 |
| 6612 - 16a - 10 | Six inches | 7.4* |
| PY - 1 - 11 | Six inches | 330 |
| Park - 12 | Surface | 7.6* |
| PY - 3 - 13 | Six inches | 360 |
| R - 1 | Rinseate Blank | Non-Detect |

* pH units

Based on the XRF survey and soil sample data, it was determined that soil contamination was limited to 6612 and 6622 Clara St., and the parkway in front of those addresses. The soil contamination at 6622 Clara St. is limited to a area approximately 25 x 25 feet behind the residence and next to the garage (according to City officials, members of the Teurman family resided at that location at one time and processed lead pigs on-site prior to smelting them). The soil contamination at 6612 Clara was spread throughout the property. Soil contamination on the parkway was uniformly spread through the length of the parkway starting at the alley and continuing until the northeast property line at 6622 Clara St. Soil contamination at all locations was limited to a depth of six to 12 inches.

After completion of the soil sampling, TAT prepared for the removal action. Removal action activities were initiated on May 6, 1992, with a site walk through with all parties involved in the removal.

If there are any questions concerning this report, please do not hesitate to contact this office.

Sincerely,

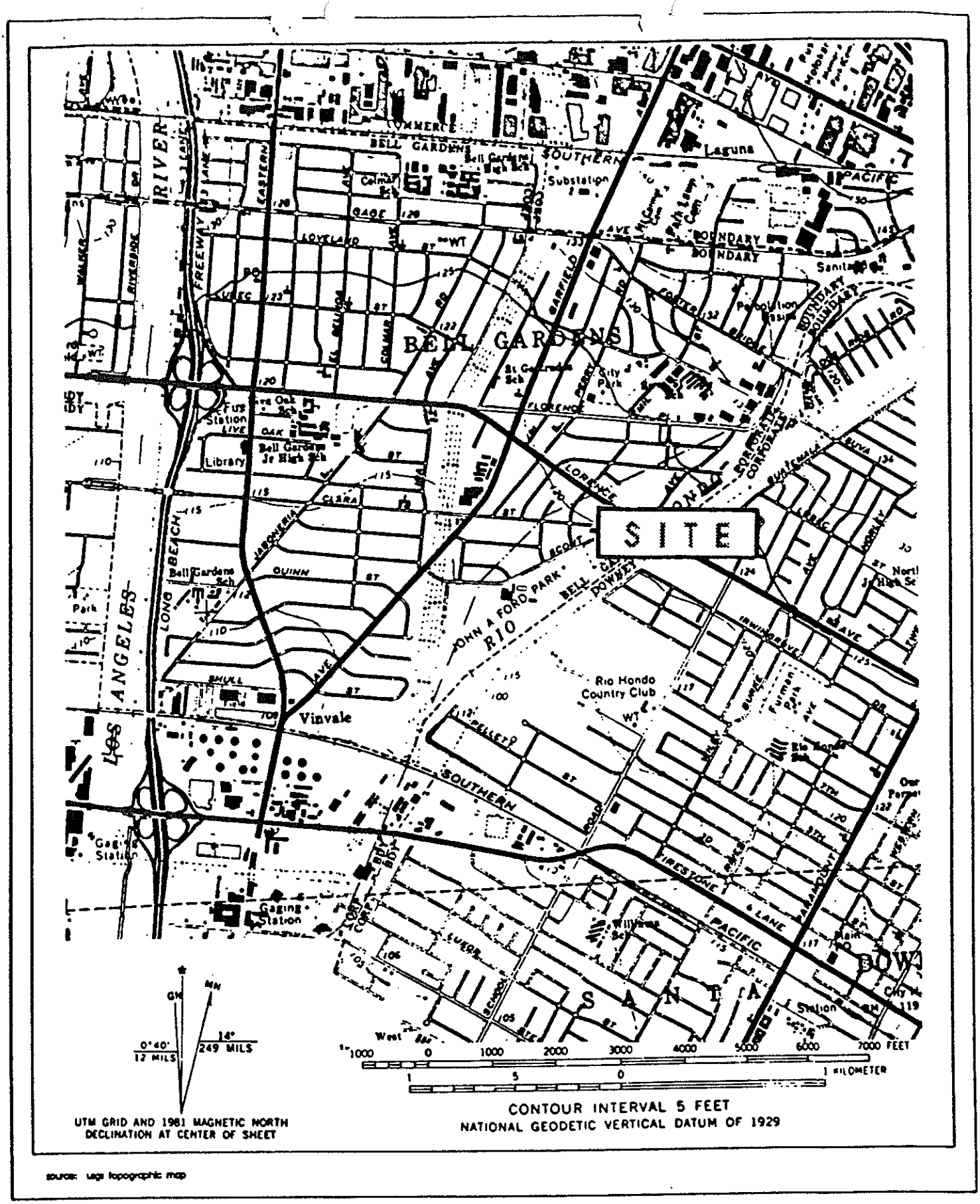
Robert L. Wise
Technical Assistance Team Member

Attachments

cc: D. Shane, USEPA OSC
File
G. Munoz, LACoFD HHU
M. Martinet, City of Bell Gardens
P. Jacobs, LACoDHS

# ATTACHMENT A

# FIGURES




source: usgs topographic map

FIGURE 1
SITE LOCATION
KING NEPTUNE MANUFACTURERS

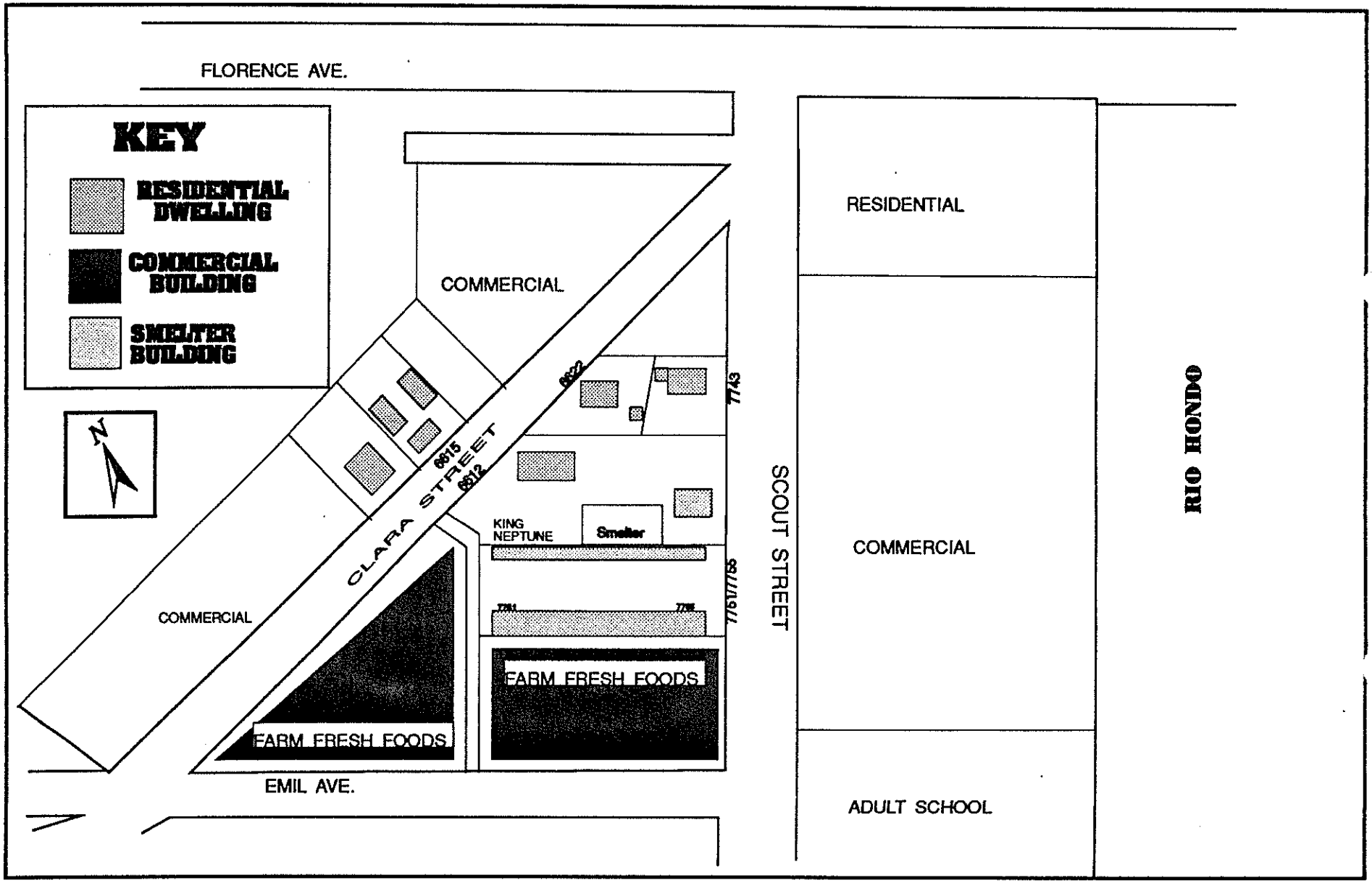



**FIGURE 2**
**SURROUNDING AREA**
**KING NEPTUNE SITE ASSESSMENTS**

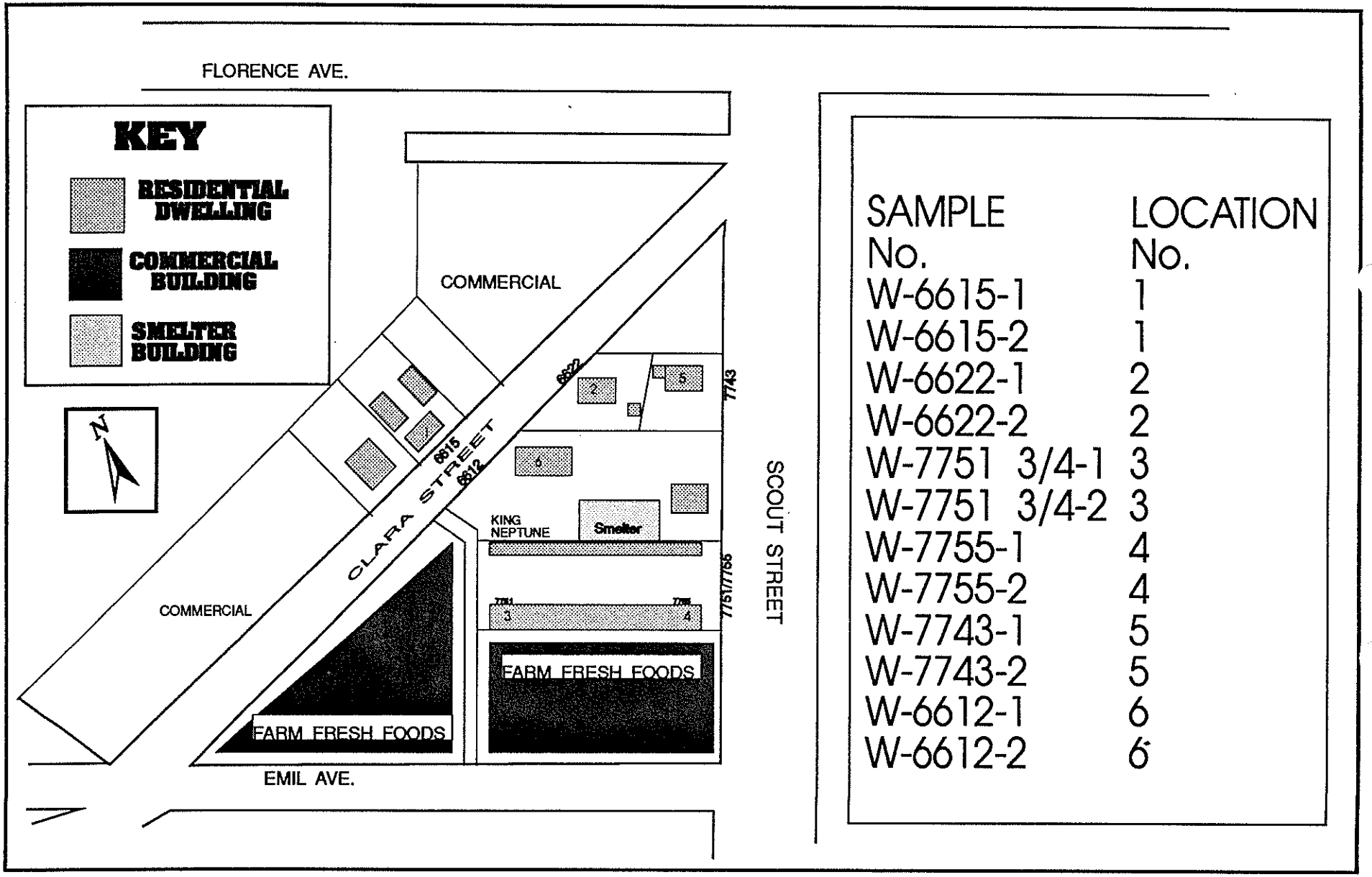
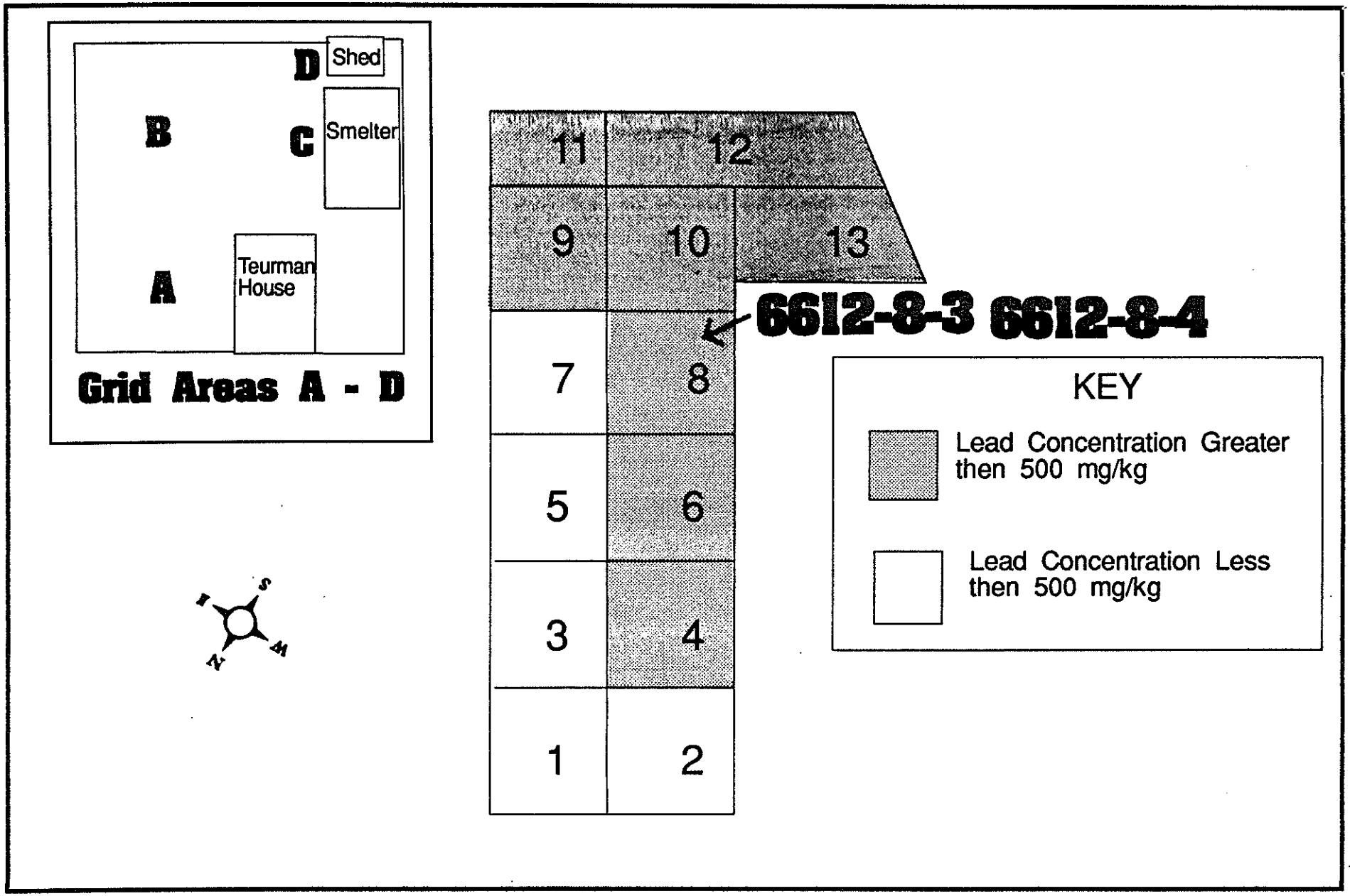
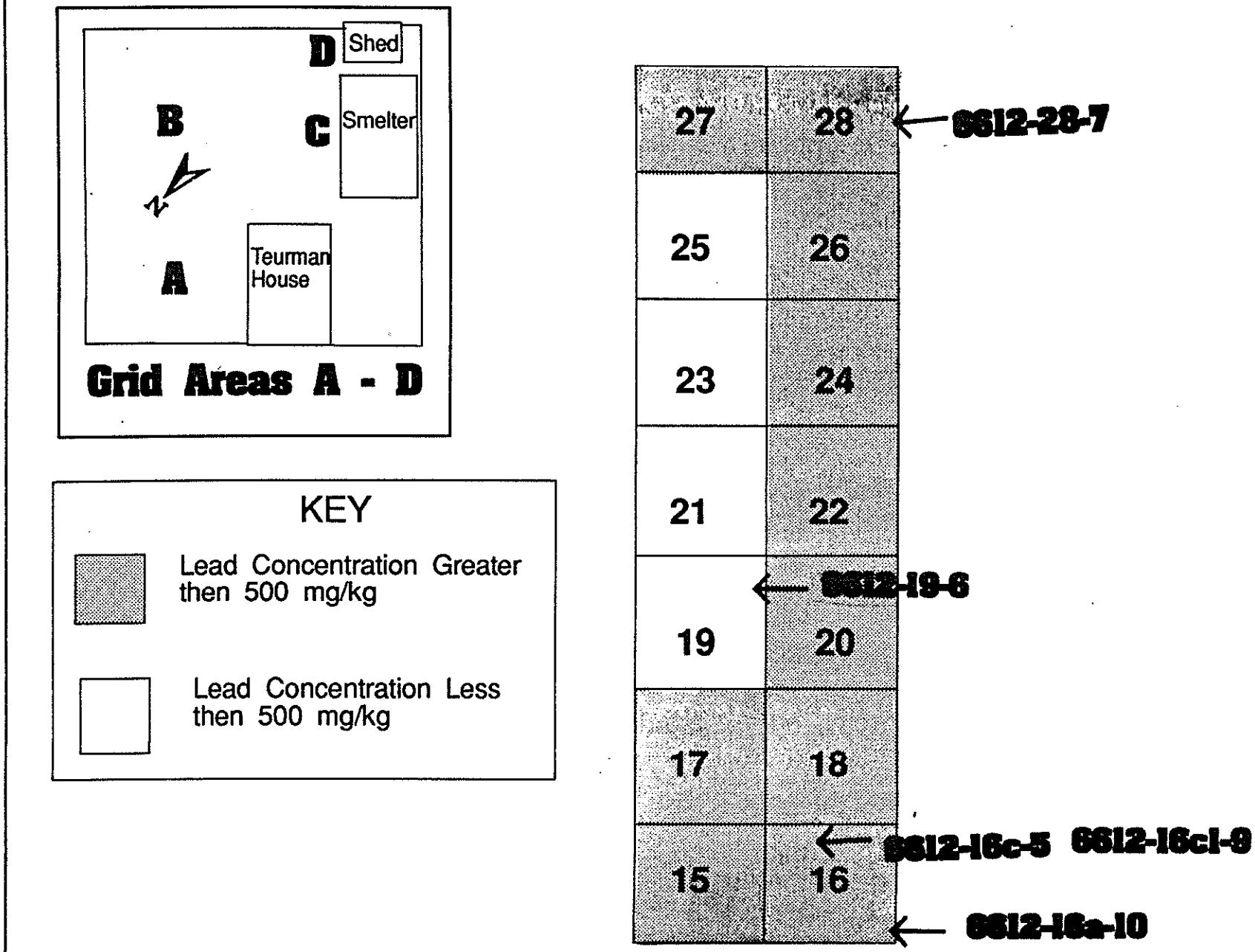



FIGURE 3
WIPE SAMPLING LOCATIONS
KING NEPTUNE INDUSTRIES SITE ASSESSMENT



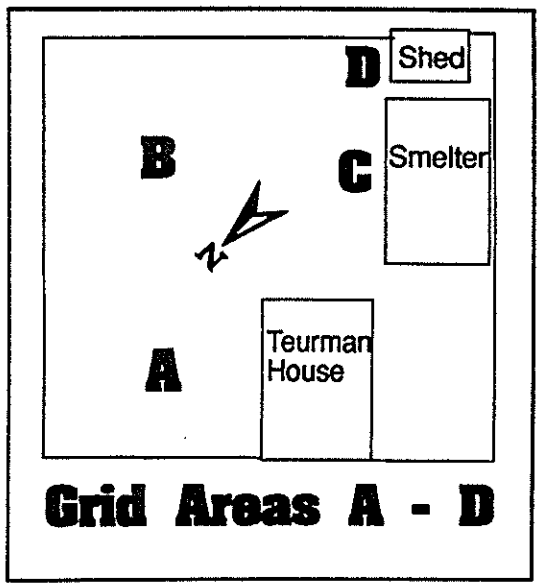

source: ecology and environment, inc.

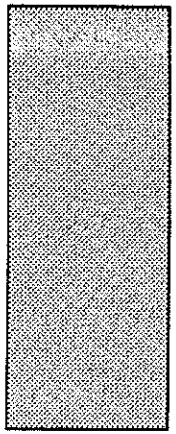
**Figure 4**
**Grid Area A / 6612 Clara St.**
**King Neptune Industries Site Assessment**



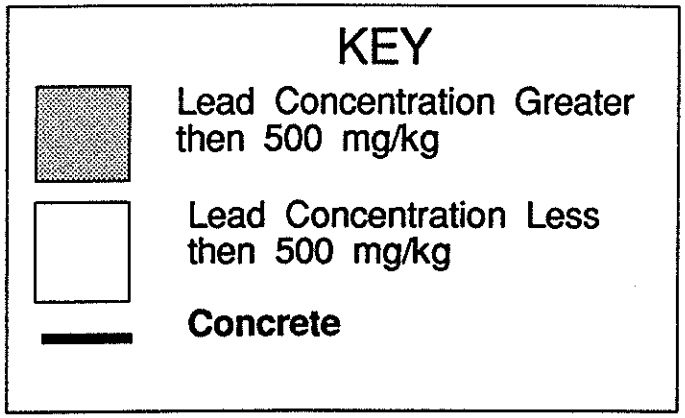

source: ecology and environment, inc.

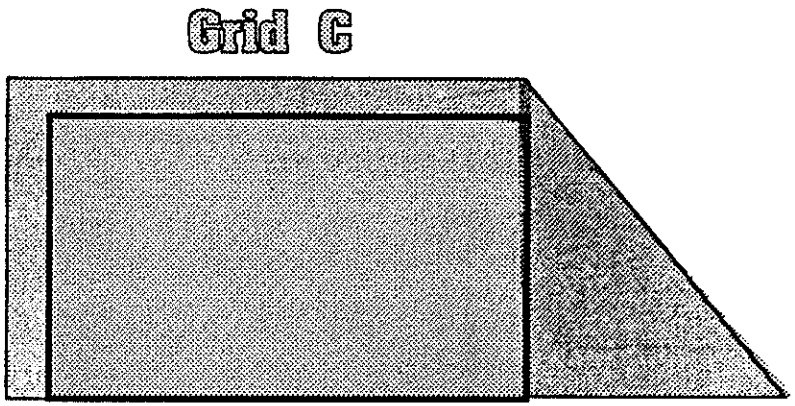
**Figure 5**
**Grid Area B / 6612 Clara St.**
**King Neptune Industries Site Assessment**



Storage Shed




Smelter Building

source: ecology and environment, inc.

**Figure 6**
**Grid Areas C & D 6612 Clara St.**
**King Neptune Industries Site Assessment**

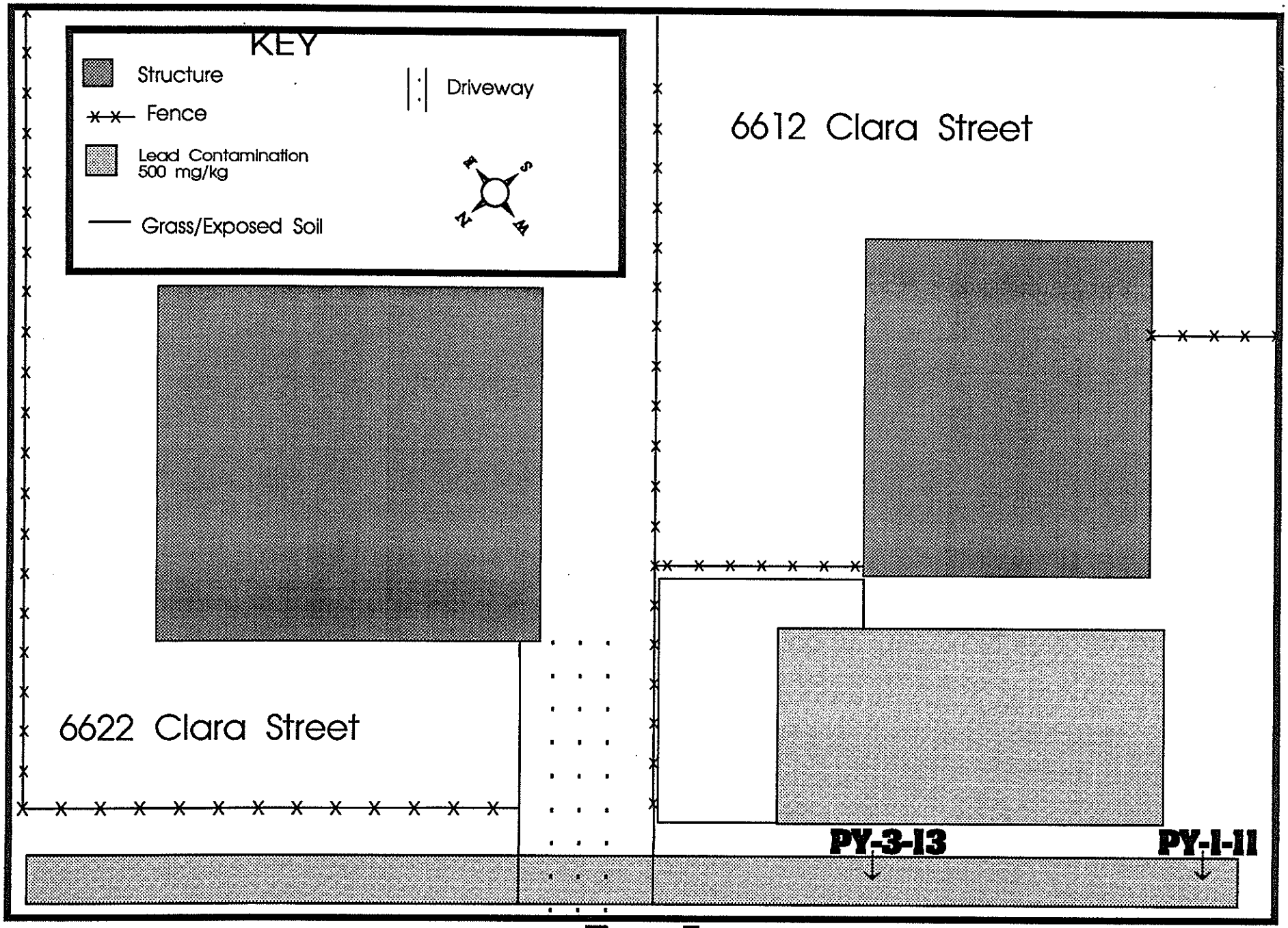
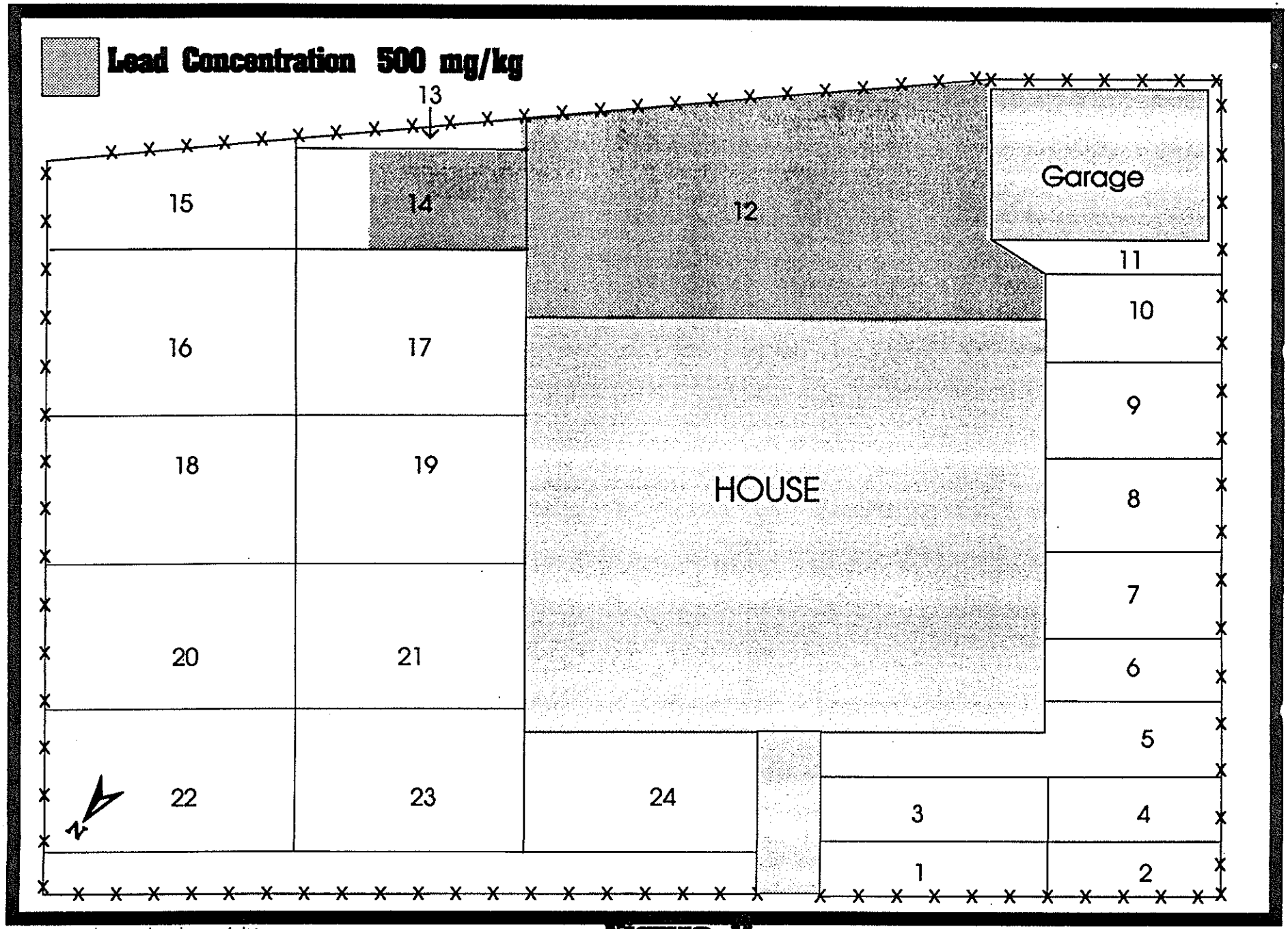



**Figure 7**
**Front Yard at 6612 Clara and Parkway**
**King Neptune Site Assessment**




source: ecology and environment, Inc

**Figure 8**
**6622 Clara Street Grid Pattern**
**King Neptune Site Assessment**

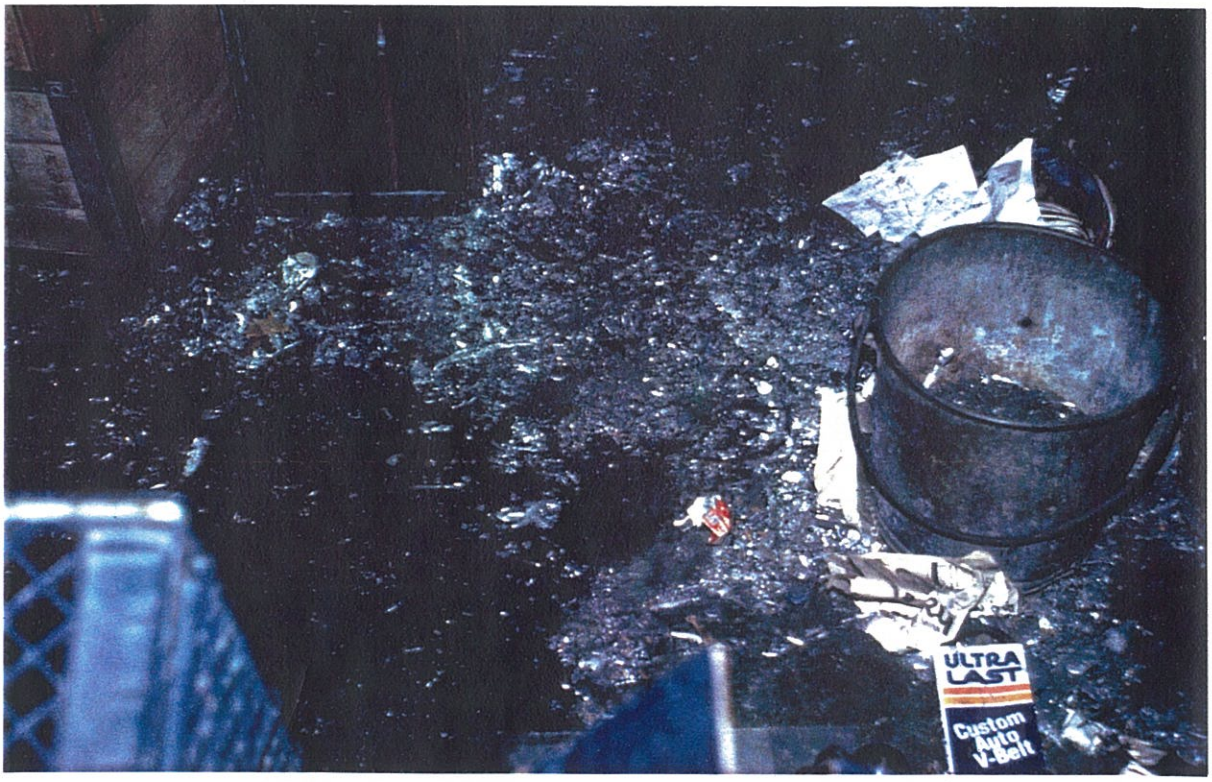
ATTACHMENT B

PHOTOGRAPHIC DOCUMENTATION

TDD#: T099201-013

PAN#: ECA1877-SAA

Lead pigs found in the smelter building.
Photographer: R. Wise
Date: 3/5/92




Lead dust and scrap on the floor of the smelter building.
Photographer: R. Wise
Date: 3/5/92

Contaminated area at 6622 Clara Street.
Photographer: R. Wise Date: 4/23/92


Isotope bottles excavated from 6612 Clara Street.
Photographer: R. Wise Date: 4/23/92

King Neptune Industries
ell Gardens, California

TDD#: T099201-013

PAN#: ECA1877-SAA

Grid Area "A" at 6612 Clara Street.

Photographer: R. Wise

Date: 4/24/92


Patio at 6612 Clara Street.

Photographer: R. Wise

Date: 4/24/92

**ATTACHMENT C**

**QASP**

# Sampling QA/QC Work Plan

King Neptune Manufacturers
Site Assessment
Phase II

TDD No.: T099201-013
PAN No.: ECA1877-SAA

Prepared for:

U.S. Environmental Protection Agency
Emergency Response Section
Region 9

Prepared by:

Technical Assistance Team
Los Angeles, California

Approvals

| Ecology and Environment, Inc. | | EPA | |
|---|---|---|---|
| Robert Wise | 4-15-92 | | |
| Robert Wise<br>Project Manager | Date | Dan Shane<br>On-Scene Coordinator | Date |

## 1.0 BACKGROUND

King Neptune Manufacturers (KNM) is located at 6612 Clara Street, Bell Gardens, California and is situated in a mixed residential and light commercial business area. The site consists of a residential dwelling, a storage building and the smelter building.

KNM has been in operation since 1955 by various members of the Teurman family and is currently operated by F. Teurman, Junior. KNM manufactures diving weights by smelting waste lead from lead pigs. Both the business and the Teurman's have been issued several administrative enforcement orders by County and State health authorities to cease operations, but have not complied.

KNM has an extensive regulatory history including involvement by County, City, State and Federal regulatory agencies. A full historic chronology is located in the King Neptune Manufacturers Site Assessment, Interim Report #1, TAT Reference No.: T190492-001.

The site assessment is being conducted in two phases. Phase I included on- and off-site sampling to document the presence of contamination. This sampling plan will cover Phase II, which will include wipe sampling and horizontal and vertical characterization of on- and off-site soil contamination.

## 2.0 DATA QUALITY OBJECTIVES

The objective of Phase II is two fold. Wipe sampling will be conducted in the on-site residence and specific off-site residential dwellings to determine the threat to human health via exposure to lead dusts and particulates. Wipe sampling will include a presample screening of the paint in each house to be sampled to differentiate between lead that has migrated from the smelter and lead from paint. Wipe sample analysis will be evaluated against the 200 ug/square foot clearance level set by Housing and Urban Development for rehabitation of a dwelling after abatement. The wipe sample data will also be sent to a U.S. Environmental Protection Agency toxicologist for review.

Soil sampling will be conducted to determine the horizontal and vertical extent of contamination. The action levels for soil lead concentration is 500 mg/kg. Once the analyses of the wipe and soil samples are complete, the best method of site mitigation will be determined.

## 3.0 QUALITY ASSURANCE OBJECTIVES

Quality assurance level 2 (QA2) protocol will be followed for this site assessment. This quality objective is intended to allow the OSC to focus on specific pollutants and specific levels of concentration quickly, by using field screening methods and verifying at least 10% by more rigorous analytical methods.

## 4.0 APPROACH AND SAMPLING METHODOLOGIES

Two different matrices will be sampled during Phase II. Wipe samples will be collected from the interior of residential dwellings, on and near the site. The wipe samples will be used to assess the exposure to lead by the nearby community. Soil samples will also be collected on- and off-site. The soil samples will be collected at the surface and at depth to determine the extent of vertical and horizontal contamination.

### 4.1 Wipe Sampling

#### 4.1.1 Sampling Design

Wipe samples will be collected from the residential dwelling on-site and five off-site residential dwellings. Two samples will be collected per residence. The samples will be collected in areas of dust buildup within a child's breathing zone (if children reside in the home, their bedroom will be sampled). All sample locations will be prescreened either by XRF orLeadCheck Swabs. The determination of which prescreening method will be used is dependent on the condition of the surface to be sampled.

During the wipe sample survey, the residents of the house will be asked to fill out an epidemiologic survey form provided by Los Angeles County Department of Health Services. A copy of this survey form is located in Attachment A. In addition to the survey form, TAT will evaluate the condition of the residence. This evaluation will be record in the site log book.

The residences to be sampled include: 6612 Clara St., 6615 Clara St., 6622 Clara St., 7743 Scout St., and two apartments at 7751 Scout St. In addition a blank sample and a sample dedicated for MS/MSD will be submitted for analysis. Wipe samples will be analyzed for total lead via SW-86 Method 7421.

#### 4.1.2 Sampling Methodology

Pre-Screening

Prior to the collection of the wipe samples, the painted surfaces of each residence will be screened to determine if the paint itself contains lead. During this screening, TAT will ascertain from the residents, the last time the house was painted. The condition of the painted surfaces will then be evaluated to determine the best method of screening. For painted surfaces that are in poor condition but not peeling and those that are in good condition a LeadCheck Swab will be used. For painted surfaces that are in poor

condition and are peeling, a sample of the peeling paint will be collected and screened using the XRF.

In the presence of lead, the LeadCheck Swabs turn from white to pink. The procedure for using this test is as follows:

1. Remove all dust and dirt from the area to be tested.

2. With the tip pointing up, squeeze and crush first point "A" then point "B".

3. Shake twice. With swab pointing down, squeeze gently, until some yellow appears on the swab tip.

4. While squeezing gently, rub the swab tip on the test area for 30 seconds.

5. If the color pink does not develop within one minute, rub the same swab on the Test Confirmation Card. If the swab still does not turn pink, repeat Steps 1-4 with a fresh swab.

If the walls of the residence are in poor shape with paint peeling, a sample of the peeling paint will be collected. This paint will be placed on a piece of filter paper and checked for lead via the XRF. A thirty second exposure period will be utilized. Please note that both screening methods provide a qualitative analysis. Neither method provides a quantitative measurement of the lead content.

Wipe Sampling

Wipe sampling is accomplished by using a sterile gauze pad, adding a dilute nitric acid substrate in which the lead is soluble and then wiping a pre-determined, pre-measured area. The sample is then packaged in an amber jar to prevent photodegradation. Each gauze pad is used for only one wipe sample. Prior to sampling, templates with a 100 square centimeters opening will be prepared for each residence to be sampled. The procedure for collecting the wipe sample will be as follows:

1. Designate the sampling point, secure the template to the wall or surface to be sampled and photodocument the sample point. Each sample will be designated by a sample number as follows: W - Address - # (ie. W-6612-1).

2. Don a new pair of disposable surgical gloves for each sample collected (used gloves will be collected in a garbage bag and secured by TAT until proper disposal can be arranged).

3. Open laboratory prepared wipe sample package.

4. Wipe the designated surface area using firm strokes. Wipe vertically , then horizontally to ensure complete surface coverage.

5. Place the exposed gauze wipe into a wide mouth, amber sample jar with a Teflon cap.

6. Custody seal the sample and place in a ziplock plastic bag.

7. Store samples out of direct sunlight and cool to 4 C.

One blank and one MS/MSD will be submitted for analysis for every 10 samples collected. The MS/MSD submitted will consist of two unused wipes to be spiked by the lab. Wipe sample SOP is taken from the ERT Compendium on Waste Sampling, Section 4, SOP 2011 (EPA Document number 540/P-91/008).

## 4.2 Soil Sampling

### 4.2.1 Sampling Design

Soil sampling will include an XRF survey and the collection of soil samples. Prior to mobilization, TAT will construct and install a site specific model on the XRF, using the samples collected in Phase I.

Prior to the XRF survey, the area to sampled will be divided into 5' x 5' grids. The area will then be mapped and the grids numbered with the survey area's address as a prefix (ie. 6612-1). Only exposed soil will be included in the grid.

The XRF survey will consist of five sample points per grid square. Each sample point will be "shot" three times at a minimum 30 second exposure period. The concentration of the 5 points will be averaged and recorded. If the lead concentration is greater or equal to 500 mg/kg, that grid square will be considered contaminated. After the surface survey of the area is completed, the grid squares that were contaminated will be surveyed below the surface. Subsurface samples will be collected at a depth of 6". If the 6" XRF survey documents the presence of lead in excess of

500 mg/kg, the subsurface survey will continue in increments of 6" until, lead concentration is below the action level. The design for subsurface sampling will be the same as the surface sampling.

Analytical samples will be collected for at least 10% of the grid squares at each depth. For every 10 samples submitted to the lab, one field duplicate and one sample designated for MS/MSD sample will be submitted. All samples will be a composite of the 5 points. The samples will be collected in a dedicated paper paint bucket and thoroughly homogenized. Samples will then be packaged into eight ounce jars.

The samples will be submitted to a California certified analytical laboratory for determination of total lead. Analysis will be performed per USEPA SW-846 Method 6010.

4.2.2 XRF Survey Methodologies

Surface XRF Samples

A designated one foot square section to a depth of one - two inches, around the sample point will be sampled. The sample will be scooped into a dedicated paper paint bucket and mixed using a dedicated plastic sampling trowel. The sample will then be sifted to removed debris, twigs and large rocks from the sample. The XRF probe will then be placed on the sifted soil, perpendicular to the surface. A time interval of at least 30 seconds will then be used to measure lead concentration. A total of three readings will be collected at each sample point. Each reading will be recorded on a XRF log sheet. Upon completion of each grid square, the mean reading and the standard deviation will be determined and recorded for that square.

Subsurface XRF Samples

Subsurface XRF Survey samples will be collected using a soil auger. One bore hole will be dug for each sample point. The auger will be decontaminated between each borehole using a TSP solution wash, tap water rinse and a final DI water rinse.

The first sample depth will be 6" with the sample collected at a depth of 4 - 8". The sample materials will be prepared and surveyed the same as the surface samples. If the action level is exceeded, samples will collected at increments of six inches, until the lead concentration is less then the action level or until the target depth of two feet has been reached.

### 4.2.3 Soil Sampling Methodologies

Surface Soil Analytical Samples

Surface soil samples will be collected as a composite of the grid square. The sample will collected to a depth of two inches. Samples will be collected using a dedicated plastic sample trowel. The materials will be collected in a paper paint bucket and thoroughly mixed. Debris such as twigs and large rocks will be removed from the sample. The sample will then be packaged in an eight ounce glass sample jar.

Subsurface Soil Analytical Samples

Subsurface soil samples will be collected two inches above and below the desired depth (ie. a one foot sample would be collected at a depth of 10 - 14 inches). A hand auger will be used to collect the samples. Each composite sample will consist of nor more than five bore holes for each grid square. Samples will not be collected in grid squares with XRF readings of less then 250 mg/kg.

The hand auger will be decontaminated between bore holes. Auger decontamination will consist of a TSP solution wash using a barrel brush to clean the inside of the auger, a tap water rinse and a DI water rinse. The decontamination solution will be collected by TAT and stored until it can be properly disposed of.

Due to the possibility that batteries were used as a lead source and may have released lead solubilized in sulfuric acid, changes in soil consistency will be noted in the log book. Area of discoloration or lead concentrations in excess of the action level will be field tested for pH. Ten percent of field pH samples collected will be submitted for analytical confirmation per SW-846 Method 9040.

During subsurface sampling at 6612 Clara St., one borehole per grid will be extended down to a depth of four feet. This will be down to determine if waste material(s) have been buried on-site.

### 4.3 Sample Documentation

All sample documents must be completed legibly in ink. Any corrections or revisions must be made by lining through the incorrect entry and by initialing the error. Sample documentation will include an XRF log sheet, sample location log sheet and photographic documentation of the grids sampled for laboratory analysis. Changes in soil consistency and field testing pH information will be recorded in the site specific logbook. Soil discoloration will be photographed

### 4.3.1 Field Log Book

The field log book is essentially a descriptive notebook detailing site activities and observations so that an accurate account of field procedures can be reconstructed in the writer's absence. All entries will be dated and signed by the individuals making the entries, and should include the following:

1. Site name and project number
2. Names of personnel on-site
3. Dates and times of all entries (military time preferred)
4. Descriptions of all site activities, including site entry and exit times
5. Noteworthy events and discussions
6. Weather conditions
7. Site observations
8. Identification and descriptions of samples and locations
9. Date and time of sample collection, along with chain of custody information
10. Record of photographs
11. Site Sketches.

### 4.3.2 Sample Labels

Sample labels must clearly identify the particular sample, and should include the following:

1. Site Name
2. Date sample was collected
3. Sample Number
4. Analysis requested

### 4.3.3 Chain of Custody

A Chain of Custody record will be maintained from the time the samples are collected to their final deposition at the laboratory. Every transfer of custody will be noted and signed for, and a copy of the this record kept by each individual who signed. When samples (or groups of samples) are not under direct control of the individual responsible for them, they must be stored in a locked container sealed with a Custody Seal.

The Chain of Custody record will include the following:

1. Sample identification number
2. Sample information

3. Sample location
4. Sample date
5. Name(s) and signature(s) of sampler(s)
6. Signature(s) of any individual(s) with control over the samples.

Chain of Custody Seals demonstrate that a sample container has not been tampered with, or opened. The individual in possession of the sample(s) will sign and date the seal, affixing it in such a manner that the container cannot be opened without breaking the seal. The name of the individual, along with a description of the sample packaging, must be noted in the Field Logbook. If for some reason the Custody Seal must be broken prior to laboratory analysis, the broken seal and reason for breaking the seal must be placed in the Field Logbook and a new seal affixed to the sample.

### 4.4 Sampling Handling and Shipment

All sample bottles will be decontaminated prior to shipment. Decontamination may consist of either wiping the outside of the container with a paper towel or a TSP solution wash and DI water rinse with a towel dry. Decontamination method will depend on the amount of external contamination on the sample bottle.

Each sample bottle will be sealed and labeled according to the following protocol. Caps will be secured with custody seals. Bottle labels will contain all of the required information. Sealed containers will be placed back in their original box, and the box sealed with a Custody Seal. The samples will then be placed in a cooler and padded with styrofoam popcorn.

### 4.5 Schedule of Activities

| ACTIVITY | START DATE | END DATE |
|---|---|---|
| QASP Preparation | 04/08/92 | 04/14/92 |
| XRF Model Construction | 04/13/92 | 04/17/92 |
| Wipe Sampling | 04/16/92 | 04/16/92 |
| Demographic Study | 04/16/92 | 04/16/92 |
| Soil Characterization | 04/20/92 | 04/23/92 |
| Technology Search | 04/23/92 | 04/28/92 |

## 5.0 PROJECT ORGANIZATION AND RESPONSIBILITIES

The overall manager of site related activities is the Federal On-Scene Coordinator (FOSC). All site related activities will be cleared with the FOSC prior to beginning the activitiy. TAT members are primarily responsible for conducting all site assessment activities. The TAT project manager is the primary

interface with the FOSC. Due to potential problems with the community's reaction to a hazardous waste site near their homes, a community relations program will be administered by the U.S. Environmental Protection Agency.

| Personnel | Responsibility |
|---|---|
| Dan Shane | Federal On-Scene Coordinator |
| Robert Wise | TAT Project Manager |
| Anthony Talamantez | TAT Site Safety Officer |
| | XRF Model Construction |
| Randy Randall | XRF Model Construction |
| Norman Claro | Community Relations (EPA) |

## 6.0 LABORATORY QUALITY ASSURANCE REQUIREMENTS

The following requirements apply to the respective QA Objectives and parameter identified in Section 3.0. The following QA Protocols for QA2 are applicable to all sample matrices and include:

1. Provide sample documentation in the form of Field log books, the appropriate field data sheets and chain of custody forms.

2. Document sample holding times; this includes documentation of sample collection and analysis dates.

3. Provide QC Summary Sheets: referenced forms found in SW-846, Chapter 1.

a. Initial and continuing laboratory instrument calibration verification (Form 2)
b. Initial and continuing calibration blanks and preparation blank summary (Form 3)
c. A MS/MSD will be performed for at least 10% of the samples collected at a spiking level of 500 ppm for soil sample and 200 ug for the wipe sample. Spike sample recoveries and duplicate results for MS/MSD analysis (Form a and 6)
d. Laboratory control sample (Form 7)
e. Sample holding times and analytical sequence (Form 10)

4. Provided copies of all raw data including instrument print outs and preparation and analytical notebook pages for all samples, standards, blanks and MS/MSD.

5. ICP Interfence Check Sample data (soil only).

6. Provide Chain of Custody Forms

## 7.0 DELIVERABLES

This site assessment requires analytical services. Documentation of lab selection, raw data, and/or results will be provided in the final report. A review of the data generated under this plan will be undertaken. The assessment of data acceptability or usability will be documented under the data validation report.

A final report will be prepared to correlate the available background information with data generated under this sampling event and identify supportable conclusions and recommendation which satisfy the objectives of this QASP.

## 8.0 DATA VALIDATION

Data generated under this QA/QC Sampling plan will be evaluated under QA2 Protocols according with appropriate criteria contained in the "Removal Program Data Validation Procedures" with accompany OSWER Directive 9360.4-1. Specific data review activities for QA2 will be performed by the below approach.

1. Of the soil samples evaluated in the field using the XRF, at least 10% will be confirmed for identification precision, accuracy and error determination.

2. The results of 10% of the samples in the analytical data package Should be evaluated for holding times, blank contamination, MS/MSD recovery and detection capability.

3. The holding times, blank contamination, and detection capability will be reviewed for the remaining samples.